

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 June 2009 (18.06.2009)

(10) International Publication Number
WO 2009/076164 A3

(51) International Patent Classification:

A61F 2/30 (2006.01) A61L 27/36 (2006.01)

A61F 2/28 (2006.01)

(21) International Application Number:

PCT/US2008/085522

(22) International Filing Date:

4 December 2008 (04.12.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/996,800 5 December 2007 (05.12.2007) US

(71) Applicant (for all designated States except US): **MUSCULOSKELETAL TRANSPLANT FOUNDATION** [US/US]; Edison Corporate Center, 125 May Street, Suite 300, Edison, NJ 08837 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SEMLER, Eric, J.** [US/US]; 117 Orion Road, Piscataway, NJ 08854 (US). **TRUNCALE, Katherine, G.** [US/US]; 4 Riverview Terrace, Hillsborough, NJ 08844 (US). **CALLAHAN, Alex, B.** [US/US]; 1050 Florida Grove Road, Apartment 26, Perth Amboy, NJ 08861 (US). **SHIKHANOVICH, Roman** [US/US]; 13 Eardley Road, Edison, NJ 08817 (US).

(74) Agent: **SELITTO, Ralph, W.**; Greenberg Traurig, LLP, 200 Park Avenue, Florham Park, NJ 07932 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
20 August 2009

(54) Title: CANCELLOUS BONE IMPLANT FOR CARTILAGE REPAIR

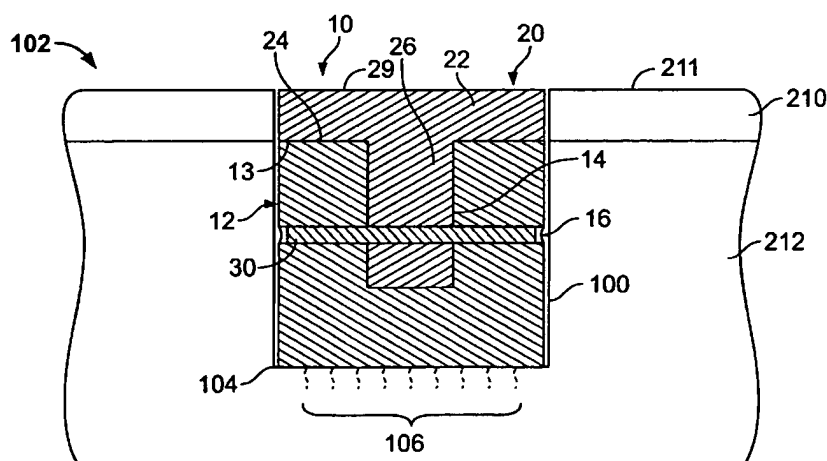


FIG. 4

(57) Abstract: The invention is directed toward a cartilage repair assembly (10) comprising a shaped allograft construct comprising a cylindrical mineralized cancellous bone base member (12) and a demineralized cancellous bone cap member (20) having a cylindrical top portion (22) and a stem (26) extending from the top portion (22) mounted to the bone base member (12). The base member (12) has a central bore (14) and a transverse bore (16) which intersects the central bore (14) and the cap member stem (26) has a through-going bore (28) which is aligned with the base member transverse bore (16) when the stem (26) is mounted in the central bore (14) to receive a pin member (30). Milled cartilage particles having a size ranging from 10 to 212 microns are mixed with a biocompatible carrier and a cartilage growth factor, with the mixture being infused in the cap member (20) to generate cartilage growth.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/085522

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61F2/30 A61F2/28 A61L27/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 627 853 A (CAMPBELL) 9 December 1986 (1986-12-09) column 1, lines 33-44 column 2, lines 25-27 column 5, line 53 - column 6, line 42; claims 1,10; figures -----	1,2, 4-14,24, 25
Y	US 2006/235534 A1 (GERTZMAN) 19 October 2006 (2006-10-19) paragraphs [0002], [0030], [0032], [0056], [0057], [0066]; claims 1,3,15,19,20 ----- -/--	1,2, 4-14,24, 25

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

30 June 2009

Date of mailing of the international search report

06/07/2009

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax (+31-70) 340-3016

Authorized officer

Klein, Christophe

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/085522

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/230303 A1 (GOMES) 18 November 2004 (2004-11-18) paragraphs [0022], [0028], [0042], [0044], [0050], [0053] - [0057]; claims 1,11,14,15,22	1,2, 4-14,24, 25
A	US 2004/102850 A1 (SHEPARD) 27 May 2004 (2004-05-27) paragraph [0042]; claim 2	1
A	US 2002/042373 A1 (CARNEY) 11 April 2002 (2002-04-11) paragraphs [0048] - [0061]	2
A	US 2005/209705 A1 (NIEDERAUER) 22 September 2005 (2005-09-22) paragraph [0049]; figures 7A,7B	3,18,19, 23
A	US 2002/120274 A1 (OVERAKER) 29 August 2002 (2002-08-29) paragraphs [0018], [0019], [0021]; figures 4,6	3,18,19, 23
A	US 6 306 174 B1 (GIE) 23 October 2001 (2001-10-23) column 6, lines 25-34; figure 16	15,18, 19,23
A	US 2004/193268 A1 (HAZEBROUCK) 30 September 2004 (2004-09-30) paragraph [0051]; figures 7-16,27,28	15,18, 19,23

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/085522

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4627853	A	09-12-1986	CA 1298935 C DE 3617897 A1 FR 2582517 A1 GB 2175506 A JP 62032965 A	21-04-1992 04-12-1986 05-12-1986 03-12-1986 12-02-1987
US 2006235534	A1	19-10-2006	WO 2006113586 A2	26-10-2006
US 2004230303	A1	18-11-2004	US 2009069901 A1 WO 2004103224 A1	12-03-2009 02-12-2004
US 2004102850	A1	27-05-2004	NONE	
US 2002042373	A1	11-04-2002	US 2002198154 A1	26-12-2002
US 2005209705	A1	22-09-2005	AU 2005221083 A1 CA 2555586 A1 EP 1737506 A2 JP 2007537778 T WO 2005086849 A2	22-09-2005 22-09-2005 03-01-2007 27-12-2007 22-09-2005
US 2002120274	A1	29-08-2002	AT 353199 T AU 784999 B2 AU 1560302 A CA 2372713 A1 DE 60217981 T2 EP 1234555 A2 ES 2279853 T3 JP 4215988 B2 JP 2002291758 A	15-02-2007 17-08-2006 29-08-2002 26-08-2002 15-11-2007 28-08-2002 01-09-2007 28-01-2009 08-10-2002
US 6306174	B1	23-10-2001	NONE	
US 2004193268	A1	30-09-2004	AT 356596 T AU 2004201204 A1 DE 602004005259 T2 EP 1477140 A2 US 2005107794 A1	15-04-2007 21-10-2004 28-06-2007 17-11-2004 19-05-2005